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Systematic review of restraint interventions for challenging behaviour among persons with
intellectual disabilities: Focus on experiences

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Abstract

Background: This article is the second in a two-part series. We focused on the effectiveness of restraint interventions (RIs) for reducing challenging behaviour among persons with intellectual disabilities (ID) in the first article. In this second article we focus on experiences with RIs for challenging behaviour among people with ID.

Methods: A mixed methods research synthesis involving statistical meta-analysis and qualitative meta-synthesis techniques was applied to synthesize 76 retrieved articles. This second article reports on the qualitative meta-synthesis of 17 articles on experiences with RIs for challenging behaviour among people with ID.

Results: The 17 included articles report on important variables relating to the persons receiving RIs, to the persons giving RIs, and to their interactions and relationship, as well as variables situated at the meso- and macro-level.

Conclusions: The developed model can assist in reflecting on and improving of current RI practices among people with ID.

Keywords: Qualitative meta-synthesis, Restraint, Challenging behaviour, Problem behaviour

Systematic review of restraint interventions for challenging behaviour
among persons with intellectual disabilities: Focus on experiences

Introduction

This article is the second in a two-part series. Together, the two articles report on a conducted systematic review of experiences- and effectiveness-studies on restraint interventions (RIs) for challenging behaviour among persons with intellectual disabilities (ID). Retrieved effectiveness- as well as experiences-articles were systematically summarized within a mixed methods research synthesis framework (Harden & Thomas 2010, Heyvaert *et al.* 2011 2013a 2013b, Sandelowski *et al.* 2006). We focused on the effectiveness of RIs for reducing challenging behaviour in the first article (i.e., Heyvaert *et al.* 2014). In this second article we focus on experiences with RIs for challenging behaviour among people with ID. It is our intent that both papers are considered together. The overall systematic search process, described in Heyvaert *et al.* (2014), was aimed at retrieving effectiveness- as well as experiences-articles. Afterwards, these effectiveness- and experiences-articles were separately analysed. At the end of the first article we discussed the findings relating to the effectiveness of RIs for reducing challenging behaviour. At the end of this second article we consider and discuss the findings of both articles.

Materials and Methods

Data collection

The systematic search process and the general inclusion and exclusion criteria are described in the preceding companion article (i.e., Heyvaert *et al.* 2014). Studies reporting on experiences of RIs had to depict the views, emotions, acceptability, and/or perspectives of carers (e.g., family, staff) and/or clients concerning RIs used in the management of challenging behaviour among persons with ID. We retrieved 17 articles on the experiences of RIs for challenging behaviour among persons with ID that met our inclusion criteria. The search of the eight electronic databases retrieved 563 unique articles, from which 12 experiences-articles met our inclusion criteria. Additionally, the manual search of the 32 journals pointed us to 2 other experiences-articles that met our criteria. Searching the

bibliographical lists of all included articles through steps one and two identified yet two other relevant experiences-articles. By consulting the three citation indexes on the articles included through steps one, two, and three, we additionally could include one experiences-article. The 17 included articles are marked (*) in the reference list.

Data analysis

We applied the meta-ethnographic approach proposed by Noblit and Hare (1988) for integrating the findings of the studies that depicted views, emotions, experiences, acceptability, and/or perspectives of carers and/or clients concerning RIs used for managing challenging behaviour of persons with ID. Their approach can be described as a translational synthesis approach, consisting of seven phases: identifying the topic of interest, deciding which studies should be included, carefully reading the included studies, determining how the included studies relate to one another, translating the studies into one another, synthesizing these translations, and communicating the synthesis to the audience (Noblit & Hare 1988 pp. 26-29). First, our topic of interest is experiences of carers and/or clients concerning RIs used for challenging behaviour among persons with ID. Second, we conducted a systematic search for relevant studies and applied inclusion criteria in order to develop an exhaustive list of studies to be included in the meta-ethnography (**see above** and Heyvaert *et al.* 2014). Third, we repeatedly read the full texts of all included studies and jotted down initial notes on important findings, themes, and concepts. Fourth, we listed the key findings, themes, and concepts of all included studies (**Table 2**) and determined how the included studies related to one another (**Table 1**): we determined whether the studies were in a reciprocal (i.e., directly comparable studies; Noblit & Hare 1988 pp. 38-47), refutational (i.e., oppositional studies; Noblit & Hare 1988 pp. 47-62), or a line-of-argument relation to one another (i.e., studies that overlap without being exchangeable; Noblit & Hare 1988 pp. 62-75). Fifth, the studies were translated into one another: we compared central metaphors, concepts, findings, and their interactions ('first order concepts and findings'; **Table 3**). Sixth, these *translations* were synthesized: the previous analysis was abstracted to a meta-level ('second order concepts and findings'; **Table 4**). Seventh, the findings of the synthesis are communicated to our audience of interest by means of the present article.

Results

The characteristics and main findings, themes, and concepts of the 17 articles on the views, emotions, experiences, acceptability, and/or perspectives of carers (e.g., family, staff) and/or clients concerning RIs for challenging behaviour among persons with ID are respectively depicted in **Tables 1** and **2**. We identified four lines of argument (cf. **Table 1**), that consider (a) acceptability and social validation of RIs, (b) experiences of family carers concerning RIs, (c) experiences of people with ID concerning RIs, and (d) experiences of professional carers concerning RIs. The line of argument synthesis was conducted by repeated comparisons between the included studies: we systematically uncovered the similarities and dissimilarities among the 17 studies (cf. Noblit & Hare 1988 p.64). The studies were translated into one another and first order concepts and findings were tabulated (**Table 3**). Then, the first order concepts and findings and their interactions were synthesized and second order concepts and findings were tabulated (**Table 4**). Based on these analyses we developed an integrated scheme: an heuristic model (**Fig.1**) and the accompanying text (**see below**) that synthesize the findings on views, emotions, experiences, acceptability, and perspectives of carers and clients on RIs for challenging behaviour among persons with ID.

Fig.1 and the accompanying text describe the most important concepts involved in RI processes for challenging behaviour among persons with ID. In **Fig.1** two ovals are depicted: one for the person receiving the RI and one for the person giving the RI. The space where the two ovals overlap in **Fig.1** depicts the interactions and relationship between the involved persons, and their experiences of the shared RI. The characteristics of and interactions between the persons giving and receiving the RI are situated at the micro-level. At the meso- and macro-level, characteristics of the direct environment, of policy, and sociocultural views influence the interactions between the persons giving and receiving the RI.

Experiences of the people receiving restraint

Before, during, and after the RI process, persons receiving the RI experience a diverse scale of physical and emotional reactions. Persons with ID reported that the challenging behaviour that gave rise to the RI is often caused by the behaviour of other clients, by caregiver behaviour, or by the atmosphere of their direct environment (*'When people wind me up. Call me names and all of that'*,

'People get pissed off with being here', 'When you've got something on your mind and staff's not listening, you play up', 'I wanted a glass of milk and they said 'no' so I kicked off'; Fish & Culshaw 2005, Jones & Kroese 2007).

Emotions reported by them to be experienced during the RI included general dislike (*'It's not very nice'*), sadness, distress, desperation, anger, confusion, fear, anxiety, feeling stressed, feeling upset, and feeling helpless against the degree of force used when held in restraint; physical experiences during the RI were pain, harm, discomfort, but sometimes also comfort (*'How does your body feel?' 'Comfortable'; 'Feels safe'*) (Hawkins *et al.* 2005, Jones & Kroese 2008, Longo & Scior 2004, Lunsby & Gracey 2009, MacDonald *et al.* 2011, Murphy *et al.* 1996, Ramcharan *et al.* 2009, Sequeira & Halstead 2001). Sometimes anger and frustration experienced during the RI resulted in more aggressive behaviour (*'[restraint] makes things worse'; 'makes me more angry'*; Jones & Kroese 2007, Sequeira & Halstead 2001). In contrast, sometimes self-strategies for calming were reported, such as talking and relaxation (*'I try talking...try and keep talking' 'I relax and do my deep breathing'*; Hawkins *et al.* 2005). Additionally, some of the respondents appeared to cognitively distract themselves during RIs by thinking about something unrelated (*'What do you think about whilst staff are holding you?' 'That I'd like to be out for a walk somewhere'*; Hawkins *et al.* 2005), while others described how they let their mind go blank during RIs in order to block out the experience (*'Take my mind off it'*; Hawkins *et al.* 2005). Some participants reported positive effects of the RIs: they said that RIs effectively helped them to calm down and feel safe (Fish & Culshaw 2005, Jones & Kroese 2007). One participant reported that different caregivers did not always use the same RI techniques and that this unpredictability created further anxiety for him (Jones & Kroese 2007).

After the RI the emotions experienced were sadness, feeling frightened, feeling guilty for being aggressive, being upset by the incident, and sometimes relief (*'if she didn't restrain me I wouldn't be here today'*; Brown & Beail 2009). Often reported physical experiences after the RI were fatigue (*'worn out'*) and exhaustion *'from the struggling during restraint'* (Brown & Beail 2009, Fish & Culshaw 2005, Hawkins *et al.* 2005, Jones & Kroese 2007, 2008, Sequeira & Halstead 2001). Some participants reported positive interactions after they had been restrained, while others said they were not spoken to and even ignored after being restrained (Jones & Kroese 2007).

Experiences of the people using restraint

For persons using the RIs, likewise divergent physical and emotional experiences played a role before, during, and after the RI. The findings for this part of the heuristic model were deduced from the studies of Elford *et al.* (2010), Hawkins *et al.* (2005), and Ravoux *et al.* (2012). Before the RI, negative emotional reactions that they often experienced were frustration (when less restrictive strategies were proven ineffective in reducing the challenging behaviour; when trying to discover the reason for the challenging behaviour in order to prevent it), dread (‘*because you know it’s going to be long and hard*’; Hawkins *et al.* 2005), and fear, anger, and distress (directly related to the type and intensity of the challenging behaviour). An often experienced physical reaction was the rise in adrenaline: *high levels of adrenaline carried them along throughout the RI process, helping them to counteract the ‘fight’ or ‘flight’ response to challenging behaviour, by making their responses more automatic and self-controlled* (Hawkins *et al.* 2005). Differences in levels of predictability of the challenging behaviour and of the course of events for each RI resulted in a feeling of being generally ‘*on edge*’ and contributed to rising adrenaline levels and to aggravating negative emotional reactions: a lower level of predictability heightened the perception of risk and increased the likelihood of the use of more restrictive strategies. After a process of evaluating the risks-benefits balance and prioritizing the best interests of all people involved (e.g., *ensuring safety, potentially causing harm, reducing humanity, risking danger*; Elford *et al.* 2010), a decision to start the RI was made. When people felt they were in a rather *predictable* situation, their decision to intervene was more directly informed by behavioural guidelines (*as planned*). However, when they felt they were in an *unpredictable* situation, the decision-making process was described as more *rapid, automatic, and instinctive*.

During the RI, the carers experienced a range of intense emotions such as hope that the challenging behaviour was going to reduce, positive feelings because they were asserting control and preventing harm, frustration when the challenging behaviour worsened, next to irritation, anger, fear, worry, disgust, compassion, guilt, boredom, sadness, self-doubt, helplessness, shock, and feeling scared. This *heightened emotional arousal* complicated their responses during the RI. Furthermore, in this stage they often experienced physical exhaustion due to the adrenaline rise, the physical nature of the restraint techniques, and the duration of RIs. While experiencing these physical and emotional

reactions, a concern was to apply the techniques and follow the procedures correctly in order to ensure the safety of all people involved. The decision to stop the RI was complicated by their own physical and emotional reactions, as well as by the concern to follow the procedures correctly (e.g., fear about what might happen if an RI was ended too soon, depending on the level of predictability of the challenging behaviour).

Directly after the RI, the carers experienced feeling '*on edge*' because of the low level of predictability about what might happen next, resulting in dilemmas on how to best approach the person with ID at this moment without re-triggering or reinforcing the challenging behaviour. When the '*on edge*' period had passed, they fully experienced the physical and emotional impact of the RI (e.g., feeling tense, feeling drained, sometimes experiencing physical pain, sometimes blaming themselves '*If I hadn't done this, if I hadn't done that*'; Fish & Culshaw 2005), accompanied by a sense of relief that it was all over. However, some described a process of habituation when they became desensitized to challenging behaviour and RI by repeated exposure to it. Afterwards, they often reflected on the incident ('*Could we have done that differently?*'; Hawkins *et al.* 2005), evaluating whether the right techniques and procedures were applied, how effective the used RI was, how the experience had been for the person with ID ('*I think of the service user (...) It's quite hard for them really*'; Hawkins *et al.* 2005), and what the impact was on themselves and on their relationship with the person with ID.

Interpersonal processes and interactions

The RI process is on the one hand influenced by characteristics of the person receiving the RI, such as the level of ID (e.g., influencing the degree of understanding of the personal role and personal control during and in the ending of the RI; see Hawkins *et al.* 2005), the ability to communicate verbally (Ravoux *et al.* 2012), type of challenging behaviour (intensity, frequency, duration, topography; e.g., Dagnan & Weston 2006), size and strength of the person (e.g., Elford *et al.* 2010, Ravoux *et al.* 2012), and personal history (e.g., previous traumatisation; see Fish & Culshaw 2005). On the other hand, the RI process is influenced by characteristics of the person giving the RI, such as gender, age, proficiency and training, stress level, personal history, personal values and attitudes, personal experiences of effectiveness of different RIs, and personal acceptability of different RIs (e.g.,

Cunningham *et al.* 2003, Elford *et al.* 2010, Foxx *et al.* 1996, Hawkins *et al.* 2005, Jones & Kroese 2008, McDonnell & Sturmey 2000, Ravoux *et al.* 2012).

Each incident that resulted in an RI was influenced by the relationship between both parties (Elford *et al.* 2010, Fish & Culshaw 2005, Ravoux *et al.* 2012) and by characteristics of previous shared encounters involving challenging behaviour (e.g., type of the challenging behaviour, RI process; Hawkins *et al.* 2005, Ravoux *et al.* 2012). For instance, carers referred to their '*experiential database*' of previous experiences managing the person's behaviour to guide their response: '*it's just knowing your clients really, the longer I have known them, the more I know what will work and who is in what mood, you know*' (Ravoux *et al.* 2012).

During the whole RI process, the persons involved not only reacted according to *their own* physical and emotional experiences, but also according to *perceived* motives (e.g., perceived motives for RIs '*It had to be done. A necessary evil*' vs. '*Using interventions to punish and control clients*' '*Just to prove they are in charge*'; perceived motives for challenging behaviour such as '*to test staff*', '*to gain the attention he's been seeking*', '*because they are being restricted, boredom*'), *perceived* emotions and experiences (e.g., perceived emotions of carers '*They thought they were helping*' or '*They felt very scared. They were a bit worried and stuff*' or '[They felt] *sad when I'm angry*' or '[It felt] *not very nice for them*' vs. '*I think they enjoyed it*'; perceived emotions of persons receiving RIs '*remorseful behaviour*' vs. '*stimulating further anger*'), and *perceived* body sensations (e.g., pain, (dis)comfort, force) *of the other person(s) involved* in the encounter (Fish & Culshaw 2005, Hawkins *et al.* 2005, Jones & Kroese 2007, MacDonald *et al.* 2011, Ramcharan *et al.* 2009, Ravoux *et al.* 2012, Sequeira & Halstead 2001). When there is a low level of congruence between the *perceived* motives, body sensations, emotions and experiences and the *actual* motives, body sensations, emotions and experiences, this negatively affects the relationship between and the experiences of the involved parties. For instance, the actual experiences of the persons receiving RIs were more negative than believed by the carers: the latter may not realize in what ways and how greatly RIs affect persons with ID, or they may ignore or discount the negative experiences of the persons with ID in order to reduce their own cognitive dissonance (Hawkins *et al.* 2005).

The included studies report on important differences between both involved parties that influence the RI interactions. The first important difference is the level of understanding of the RI process. Depending on their level of ID, the poor understanding of persons receiving RIs about the restraint process and about the roles and positions of the two involved parties, as well as the unpredictability of the RI process, might predispose them to increased stress levels (Hawkins *et al.* 2005, Jones & Kroese 2008). Some participants included in the studies had no understanding of their personal role in the starting (*'I don't know when it's going to happen, it just does'*) and the ending (*'I don't know why they stopped. They just felt like doing it'*) of the RI: they did not recognize that an RI's starting and ending was dependent on their behaviour (Hawkins *et al.* 2005). The *perceived* level of understanding of persons receiving RIs was an important variable for the carers. When carers developed a framework of understanding the challenging behaviour of the participant and there was a high level of congruence between the perceived and actual causes of the challenging behaviour, this worked as a prevention strategy against risky RIs and improved mutual relationships (cf. Ravoux *et al.* 2012).

The second important difference is the level of control over the situation. The level of personal control of persons with ID over the course of events and over their challenging behaviour was an important factor for them: some participants got so *'lost in it all'* that they were unable to control the escalation of their challenging behaviour despite their caregivers' attempts to calm them down, while other participants used their understanding of their personal role to control a situation by intentionally instigating RIs (Hawkins *et al.* 2005). The *perceived* degree of personal control that a person with ID had over their challenging behaviour was also an important variable for the carers. The carers tried to control and de-escalate the situation in order to prevent or minimize RI use. However, unpredicted challenging behaviour and challenging behaviour of unusual duration or intensity affected the extent to which carers could control the situation (Ravoux *et al.* 2012).

The third important difference concerns the answer to the question whether RIs were only used as the last resort. On the one hand, persons using RIs reported that they applied RI *only as the last resort* (e.g., *'I know that I said before that if there's any way you can avoid being involved in physical restraint then it's worth finding that other option. But then again I feel there are some times*

where you can't avoid a confrontation.'; Fish & Culshaw 2005). However, they recognized that due to their own emotional and physical reactions and depending on the level of predictability of a situation, they sometimes started too soon or proceeded too long with an RI (e.g., *'During the intervention, my level of stress rises as the service user struggles more and more. You don't always get rid of that stress at the same time as the service user does. That can make it difficult to actually let go and stop the restraint'*; Hawkins *et al.* 2005). When carers felt caught off guard their decision making process was more instinctual and less informed by the behavioural guidelines: *'that was the first sort of thing that came to mind and that's what you do, you don't have a chance to think and plan it'* (Ravoux *et al.* 2012). The carers discussed the issue of power in RIs and the potential for misuse (Elford *et al.* 2010).

On the other hand, the persons receiving the RIs often reported that the use of restraint had not been justified, and suggested alternatives that would help calm potentially confrontational situations, such as better communication, distraction from the challenging behaviour, talking about their problems to caregivers, good (trusting) relationships with caregivers, or time alone in their room (e.g., *'They should have sat with him and talked to him and calmed him down. Or taken him for a walk', 'It was necessary that time, like I was being aggressive, I kicked the door down, I understand. But sometimes, like I say it's not necessary. If you tell me to go into my room I will do'*): less intrusive interventions were preferred over more invasive procedures (Fish & Culshaw 2005, Jones & Kroese 2007, Lunsky & Gracey 2009, MacDonald *et al.* 2011, Ramcharan *et al.* 2009).

The participants in the retrieved articles reported on good practices (e.g., *When [she] was put in restraints, it was pretty horrible, but very nicely done. They were very respectful. They spoke to [her], explained what they were doing'*; Lunsky & Gracey 2009) and bad practices (e.g., *'Someone [staff] kicked me on the leg and hit me like that [demonstrates]. Punches to the stomach. It was wrong. It was nasty. Awful'*; Ramcharan *et al.* 2009) of RIs, respectively associated with positive and negative experiences of RIs. The included studies describe that the use of RIs is controversial due to ethical issues (e.g., *'Certainly not good for her as a human being... Basically I think [daughter] is in permanent seclusion ...'*; Ramcharan *et al.* 2009) as well as to sometimes counter effective results (e.g., *'Restraint makes me more violent. I get more violent and I just lash out'*; Jones & Kroese 2007). The impact of RIs upon dignity and quality of life was discussed as an important issue (Elford *et al.*

2010). Relating to dignity and quality of life, persons giving and receiving RIs evaluated some RI methods as more acceptable than others (Hawkins *et al.* 2005, Jones & Kroese 2008).

The persons using the RI attributed a particular meaning to the challenging behaviour which subsequently influenced their attitudes towards future challenging behaviour of that person as well as the future relationship between both parties. When challenging behaviour was perceived as *a test for them* or when they believed that the person with ID had some degree of control over the challenging behaviour, this resulted in a call for a more authoritarian and firm attitude. However, when challenging behaviour was interpreted as *enduring* and *unpredictable*, they were likely to attribute the causes of the challenging behaviour to factors out of their control. Likewise, some of the persons receiving the RI attributed carers motives for using RIs (cf. *'It had to be done. A necessary evil'* vs. *'Using interventions to punish and control clients'*) which subsequently influenced their future attitudes towards the carers as well as the future relationship between both parties.

Meso- and macro-level

In Fig.1, the two central ovals are depicted within a larger figure, referring to influences of the direct environment, of policy, and to even wider sociocultural influences. First, influences of the direct environment on RIs concern context characteristics (e.g., public vs. private space, level of violence in the environment, safety issues; MacDonald *et al.* 2011, Ramcharan *et al.* 2009, Ravoux *et al.* 2012) and the absence/presence of other persons in the immediate environment (e.g., other caregivers, other persons with ID; Elford *et al.* 2010, Hawkins *et al.* 2005, Ravoux *et al.* 2012). For instance, when a family carer had to manage a challenging behaviour episode alone, the recommended technique that required two persons could not be used and the carer had to deal with the situation as best as possible (Elford *et al.* 2010). Staff shortage, the physical environment, and the potential risks to the public, the other persons with ID, other staff, and the person who challenged influenced the extent to which professional carers could control the environment in which the challenging behaviour took place (Ravoux *et al.* 2012). Team working when managing persons with challenging behaviour encompassed support seeking, backing staff up, and leadership taking (Ravoux *et al.* 2012). Furthermore, the included studies reported that a situation involving RI also has negative effects on

other persons with ID who witness the encounter: staff should consider the impact on the onlookers as well as the recipients of RIs (MacDonald *et al.* 2011).

Second, influences of policy (for staff) or received information from professional services (for family carers) on RIs include, for instance, guidelines on preferences as to which intervention under which circumstances should be used and guidelines for specific intervention techniques (Elford *et al.* 2010, Ravoux *et al.* 2012). The values of the service, the managers' values, the staff training provided, the behavioural guidelines, and the policy context influenced the actions of the professional carers (*'The responses I have are very limited because we have to be following the procedures'*; Ravoux *et al.* 2012). For instance, using certain mechanical restraint devices was not accepted in some services and recommended by other professional instances (Elford *et al.* 2010). Family carers reported on good and bad experiences with turning to professional services for advice and support on RIs: *where this worked well they felt listened to, supported and informed, but where this was not the case they felt ignored, isolated and kept in the dark* (Elford *et al.* 2010).

Third, the general sociocultural (non)acceptability of (different) RIs can additionally influence particular encounters. In general, RIs were evaluated negatively by persons using RIs, persons with ID and challenging behaviour who were receiving RIs, as well as by persons not involved in RI processes (Cunningham *et al.* 2003, McDonnell & Sturmey 2000). The degree to which RIs were viewed negatively was dependent on the method of RI used. For instance, chair RI procedures were evaluated as more socially acceptable than floor RI procedures by persons using RIs, persons with ID and challenging behaviour who were receiving RIs, as well as by persons not involved in RI processes (Cunningham *et al.* 2003, Jones & Kroese 2008, McDonnell & Sturmey 2000). The degree to which certain RIs were viewed negatively was dependent on the rater group. For example, Jones and Kroese (2008) found that persons with ID and challenging behaviour rated a face-up RI as more acceptable, while persons using RIs rated a face-down RI as more acceptable. Some important factors that influence treatment acceptability are the severity of the challenging behaviour, the time and effort associated with the implementation, knowledge of behavioural principles, side-effects of the intervention, and viewing the individual and challenging behaviour to be treated (Foxx *et al.* 1996).

Discussion

Experiences of RIs for challenging behaviour among people with ID involve intrapersonal, interpersonal, and contextual factors: we discussed factors relating to the persons receiving RIs to the persons giving RIs and to the interactions and relationship between the involved persons as well as factors situated at the meso- and macro-level

The 17 experiences-articles report on important similarities and differences between the persons giving and receiving RIs. Both the parties giving and receiving the RI experienced particularly negative emotional reactions during the RI, felt physically exhausted, felt anxious and insecure due to the unpredictability of the RI process, and often applied coping strategies to deal with the situation. The major differences between both parties are the level of understanding of the RI process, the level of control over the situation, and answers to the question whether RIs were only used as the last resort. Persons with ID reported that RIs were often used unnecessarily and they suggested to first try alternatives to RIs, while persons giving the RI reported that they applied RI only as the last resort. However, the latter group recognized that due to their own emotional and physical reactions and depending on the level of predictability of a situation, they sometimes started too soon or proceeded too long with an RI. Thus, being in an unpredictable situation, experiencing strong emotional and physical reactions, and feeling the urge to respond automatically could result in discrepancies between conceptualizations of good practice in challenging behaviour management and its real-life implementation (Hawkins *et al.* 2005, Ravoux *et al.* 2012). Alternatives to RIs to prevent and reduce challenging behaviour suggested by persons with ID were: better communication and better relationships with caregivers as good long-term strategies; talking about their problems and about how they felt to caregivers, distraction from the challenging behaviour, and giving persons quiet time in their rooms as good short-term strategies (Fish & Culshaw 2005, Jones & Kroese 2007, Lunsky & Gracey 2009, MacDonald *et al.* 2011, Ramcharan *et al.* 2009). Together discussing and evaluating the causes of the incidents requiring RIs as well as the RIs themselves might reduce the negative experiences and distress of the involved parties and might result in collaboratively adjusting the individualised management strategy.

In addition to using the meta-ethnographic approach (Noblit & Hare 1988) for integrating the findings of the studies that depicted views, emotions, experiences, acceptability, and/or perspectives of carers and/or clients concerning RIs used for challenging behaviour of persons with ID (cf. supra), we aimed to deduce general *guidelines for good practice*. These guidelines were derived from our reading of the included articles. During a separate session of re-reading all the included articles, we exclusively focused on hints and guidelines for good practice. Using a constant comparative approach, we started with reading the first retrieved article, wrote down possible guidelines, then moved to the next article, and constantly compared hints and guidelines for good practice that were reported by the authors of the included studies. Accordingly, all the guidelines for good practice reported on in this paragraph are based on what was written by the authors of the included studies. This is our final set of deduced guidelines for good practice: (a) RIs should only be used for challenging behaviour that poses a serious threat to the safety of the persons with ID or others, (b) only after proactive (e.g., ecological change, antecedent change, skill development, differential reinforcement; Hawkins *et al.* 2005) and less restrictive (e.g., distraction and diversion) interventions alone have been shown to be ineffective to guarantee their safety, (c) and only after health concerns that might contraindicate RIs have been ruled out, (d) thereby always applying an attitude of respect when implementing RI procedures. Like Williams (2010) states, everyone should be opposed to unnecessary, incorrect, or unauthorized restraint use, and to any abuse of someone in restraint.

Considering the included papers on persons giving and receiving RIs, we notice a discrepancy in homogeneity amongst papers and reported complexity of experience. In **Table 3**, there is considerably more text about experiences of staff compared to experiences of people with ID, although there are far more included articles about the latter (cf. **Table 1**). This discrepancy reflects the greater homogeneity amongst the included papers on people with ID as well as the greater complexity of experience amongst staff that is reported in the included papers. It is possible that the researchers studying the experiences of the people with ID could not or did not ‘dig deep enough’. Perhaps they *could* not dig deep enough, because of the limited communicative and cognitive abilities of the participants. Or perhaps they *did* not dig deep enough. The researchers might have failed to explore the service user experiences in ways that might lead to greater depth and complexity. For instance,

they could have conducted more interviews, longer interviews, they could have conducted verification meetings to verify the accuracy of their interpretation of the collected data (i.e., ‘member checks’), or they could have (additionally) used methods other than interviews that might be more appropriate to study the experiences of people with ID (cf. Fraser & Fraser 2001, Jurkowski 2008, Mactavish *et al.* 2000, Perry 2004). This issue warrants further research, as it might reveal greater depth and complexity in the service user experiences.

Confronting the studies and findings included in the first and second article of our two-part series, we notice several important discrepancies. The first article of our two-part series reported on the meta-analysis of 59 single-case experimental (SCE) effectiveness-studies. Our conclusions were that RIs were on average highly effective in reducing challenging behaviour for people with ID and that this reduction in challenging behaviour was statistically significant (Heyvaert *et al.* 2014). However, the findings synthesized in this second article emphasize that the use of RIs is controversial due to ethical issues as well as to counter effective results. The retrieved experiences-articles reported on good and bad practices of RIs, respectively associated with positive and negative experiences of RIs.

Second, the number of retrieved independent SCE effectiveness-studies ($n = 59$) clearly outweighs the experiences-studies ($n = 17$). This corresponds to the recent emphasis on ‘*what works*’-research, and on the importance of effectiveness, measurability, and objectivity. As discussed in the last paragraphs of Heyvaert *et al.* (2014), it is important to make a distinction between the management and treatment of challenging behaviour in persons with ID. The SCE studies synthesized in the first article of our two-part series (i.e., Heyvaert *et al.* 2014) reported on treatments of challenging behaviour aiming to produce behavioural change in a single participant and those studies reported on reduction in the frequency of challenging behaviour as treatment outcome for RIs. The number of challenging behaviours is measured for a single participant under restraint and no-restraint conditions by multiple independent observers, and afterwards the inter-observer reliability is calculated. The SCE studies included in the meta-analysis were often conducted in an isolated context, and often the functional utility of the treatment in extending beyond the target behaviours or treatment environment into other areas of the participant’s life was not demonstrated (cf. last item of the SCED

Scale of Tate *et al.* 2008). However, in their everyday use RIs are increasingly seen to bring about the secure and effective management of risk behaviours while ensuring the safety of all persons involved, and are explicitly not given the intention to reduce challenging behaviour (Allen *et al.* 2009, Lundström *et al.* 2011). As such, RIs are seen as designed to safely respond to challenging behaviour when it occurs in order to prevent persons with ID and challenging behaviour from harming themselves or others through their self-injurious or aggressive behaviour (i.e. management of challenging behaviour). The studies synthesized in this second article report on the experiences with RIs aiming to safely respond to challenging behaviour in order to prevent harm. The reduction of challenging behaviour is not a valid outcome for studying the situational management of challenging behaviour. We see this reflected in the role attributed to treatment effectiveness in the experiences-articles. Treatment effectiveness was only discussed in two instances in the experiences-articles: (a) the RI process is influenced by characteristics of the carer, such as personal experiences of effectiveness of different RI techniques, and (b) persons who gave RIs often reflected on the encounters afterwards and evaluated how effective the used interventions were. Thus, treatment effectiveness only covers a small part of the overall RI process. Variables identified as playing a more central role in the overall RI process are characteristics of the persons involved in the encounter, characteristics of their relationship, mutually perceived motives, and experienced and mutually perceived emotional and physical reactions before, during, and after the RI. The latter demonstrates that RI processes are above all interactional in nature, intrinsically linking the actual emotional and physical reactions and perceived reactions of all persons involved.

Based on the differences found between the two usages of RIs, i.e. the treatment versus the management of challenging behaviour in persons with ID that are respectively studied in our first and second paper, we identify two important knowledge gaps. The first knowledge gap that is identified by this two-part series is the effectiveness of RIs in their everyday usage: in contrast with the many studies conducted on the effectiveness of RIs in the treatment of challenging behaviour in persons with ID (cf. Heyvaert *et al.* 2014) nothing is known about the effectiveness of RIs in their everyday usage for persons with ID. We do not even have a well-developed view of what effectiveness might mean in that context. Perhaps the closest we have got to this is LaVigna *et al.*'s (2005) notion of episodic

severity in which the effectiveness of RIs (or other reactive strategies) is measured by the extent to which it reduces the severity of an episode or incident of challenging behaviour.

The second knowledge gap that is identified by this two-part series is that effectiveness research suffers from a failure to consider the experiences of the parties involved. Behaviour analysts talk about this within the realm of social validity, but there have been very few studies which have examined participant experiences in anything like the level of detail found in the current review when the study has been focused on treatment rather than management of challenging behaviour. Both knowledge gaps warrant further research.

A third important discrepancy between the two samples concerns the studied challenging behaviour type. For the SCE studies synthesized in the first article of our two-part series the most often targeted challenging behaviour type was self-injurious behaviour (Heyvaert *et al.* 2014). However, most of the experiences-articles synthesized in this second article of our two-part series reported on RIs that were used with physically aggressive behaviour. As discussed in Heyvaert *et al.* (2014) this discrepancy can be explained by differentiating between “published treatment effectiveness studies on RIs” and “everyday use of RIs”: in the published literature data gathered on the effectiveness of RIs among persons with ID often concern the treatment of self-injurious behaviour (cf. Harris 1996, Jones *et al.* 2007, Kahng *et al.* 2002, Luiselli 1992, Matson & LoVullo 2008, Van Houten *et al.* 1992), while in their everyday use RIs are most often used with physically aggressive behaviour (Allen 2000, Allen *et al.* 2009, McGill *et al.* 2009, Tenneij & Koot 2008). It looks like the experiences-articles are more representative of the everyday use of restraint than the SCE effectiveness-studies.

The participants’ gender and their degree of intellectual disability are two other important differences in the characteristics of the samples of our two studies. Regarding gender, the sample in this second study includes more males with ID than females with ID (cf. **Table 1**), while in our first study the inclusion of males and females with ID is more balanced (cf. **Table 1** in Heyvaert *et al.* 2014, with 46 male and 48 female participants with ID). With regards to the degree of intellectual disability, the sample in this second study includes more participants with a mild and moderate degree

of ID, while in our first study far more participants with a severe and profound degree of ID were included (cf. **Table 1** in Heyvaert *et al.* 2014).

Accumulation of research findings is essential for the progression and development of knowledge (Jensen & Allen 1996). The present two-parts study is the first that systematically summarizes the existing primary research on effectiveness of and experiences with RIs for challenging behaviour among people with ID, thus filling a substantial knowledge gap. In the first article (i.e., Heyvaert *et al.* 2014), we statistically analysed the overall effect of RIs for challenging behaviour among people with ID, and additionally conducted moderator analyses involving seven extra variables. In the second article, grounded in the retrieved empirical studies we describe the complex network of variables involved in RI processes for the management of challenging behaviour among persons with ID. Developed as a mid-range theory, this model and the accompanying text can assist in reflecting on current RI practices and can increase the applicability of empirical research on RIs for challenging behaviour among people with ID to practice settings (Estabrooks *et al.* 1994). For persons with ID, more information on the factors involved in RI processes can enhance their understanding of RI processes and of their personal control and role in starting and stopping RIs, thus diminishing their feelings of unpredictability, confusion, and anxiety during RIs, and possibly also diminishing the number of future encounters that requires RIs. Thinking about which variables play an important role in RI processes for challenging behaviour among people with ID and how these variables are connected and can be affected, can help caregivers (family, staff) and policy makers to decrease the negative consequences of RIs for people with ID and their caregivers, and to increasingly replace RIs by proactive and less restrictive interventions.

References

- Allen D. (2000) Recent research on physical aggression in persons with intellectual disability: An overview. *Journal of Intellectual and Developmental Disability* 25, 41-57.
- Allen D., Lowe K., Brophy S. & Moore K. (2009) Predictors of restrictive reactive strategy use in people with challenging behaviour. *Journal of Applied Research in Intellectual Disabilities* 22, 159-168.
- * Brown J. & Beail N. (2009) Self-harm among people with intellectual disabilities living in secure service provision: A qualitative exploration. *Journal of Applied Research in Intellectual Disabilities* 22, 503-513.
- * Cunningham J., McDonnell A., Eastona S. & Sturmey P. (2003) Social validation data on three methods of physical restraint: Views of consumers, staff and students. *Research in Developmental Disabilities* 24, 307-316.
- * Dagnan D. & Weston C. (2006) Physical intervention with people with intellectual disabilities: The influence of cognitive and emotional variables. *Journal of Applied Research in Intellectual Disabilities* 19, 219-222.
- * Elford H., Beail N. & Clarke Z. (2010) 'A very fine line': Parents' experiences of using restraint with their adult son/daughter with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities* 23, 75-84.
- Estabrooks C.A., Field P.A. & Morse J.M. (1994) Aggregating qualitative findings: An approach to theory development. *Qualitative Health Research* 4, 503-511.
- * Fish R. & Culshaw E. (2005) The last resort? Staff and client perspectives on physical intervention. *Journal of Intellectual Disabilities* 9, 93-107.
- * Foxx R.M., McHenry W.C. & Bremer B.A. (1996) The effects of a video vignette on increasing treatment acceptability. *Behavioral Interventions* 11, 131-140.
- Fraser M. & Fraser A. (2001) Are people with learning disabilities able to contribute to focus groups on health promotion? *Journal of Advanced Nursing* 33, 225-233.
- Harden A. & Thomas J. (2010) Mixed methods and systematic reviews: Examples and emerging issues. In A. Tashakkori & C. Teddlie (Eds.), *Sage handbook of mixed methods in social and behavioral research* (2nd ed., pp. 749-774). Sage, Thousand Oaks.
- Harris J. (1996) Physical restraint procedures for managing challenging behaviours presented by mentally retarded adults and children. *Research in Developmental Disabilities* 17, 99-134.
- * Hawkins S., Allen D. & Jenkins R. (2005) The use of physical interventions with people with intellectual disabilities and challenging behaviour - The experience of service users and staff members. *Journal of Applied Research in Intellectual Disabilities* 18, 19-34.
- Heyvaert M., Hannes K., Maes B., & Onghena P. (2013a) Critical appraisal of mixed methods studies. *Journal of Mixed Methods Research* 7, 302-327.
- Heyvaert M., Maes B. & Onghena P. (2011) Applying mixed methods research at the synthesis level: An overview. *Research in the Schools* 18(1), 12-24.
- Heyvaert M., Maes B. & Onghena P. (2013b) Mixed methods research synthesis: Definition, framework, and potential. *Quality & Quantity* 47, 659-676.
- Heyvaert M., Saenen L., Maes B. & Onghena P. (2014) Systematic review of restraint interventions for challenging behaviour among persons with intellectual disabilities: Focus on effectiveness in single-case experiments. *Journal of Applied Research in Intellectual Disabilities* (in press).
- Jensen L.A. & Allen M.N. (1996) Meta-synthesis of qualitative findings. *Qualitative Health Research* 6, 553-560.
- Jones E., Allen D., Moore K., Philips B. & Lowe, K. (2007) Restraint and self-injury in people with intellectual disabilities: A review. *Journal of Intellectual Disabilities* 11, 105-118.

- * Jones P. & Kroese B.S. (2007) Service users' views of physical restraint procedures in secure settings for people with learning disabilities. *British Journal of Learning Disabilities* 35, 50-54.
- * Jones P. & Kroese B.S. (2008) Service users and staff from secure intellectual disability settings: Views on three physical restraint procedures. *Journal of Intellectual Disabilities* 12, 229-237.
- Jurkowski J.M. (2008) Photovoice as participatory action research tool for engaging people with intellectual disabilities in research and program development. *Intellectual and Developmental Disabilities* 46, 1-11.
- Kahng S., Iwata B.A. & Lewin A.B. (2002) Behavioral treatment of self-injury, 1964 to 2000. *American Journal on Mental Retardation* 107, 212-221.
- LaVigna G.W., Willis T.J. & Koegel R.L. (2005) Episodic severity: An overlooked dependent variable in the application of behavior analysis to challenging behavior. *Journal of Positive Behavior Interventions* 7, 47-54.
- * Longo S. & Scior K. (2004) In-patient psychiatric care for individuals with intellectual disabilities: the service users' and carers' perspectives. *Journal of Mental Health* 13, 211-221.
- Luiselli J.K. (1992) Protective equipment. In *Self-Injurious Behavior: Analysis, Assessment, and Treatment* (eds J. Luiselli, J.L. Matson & N.N. Singh), pp. 235-268. Springer-Verlag, New York.
- Lundström M.O., Antonsson H., Karlsson S. & Graneheim U.H. (2011) Use of physical restraints with people with intellectual disabilities living in Sweden's group homes. *Journal of Policy and Practice in Intellectual Disabilities* 8, 36-41.
- * Lunsky Y. & Gracey C. (2009) The reported experience of four women with intellectual disabilities receiving emergency psychiatric services in Canada: A qualitative study. *Journal of Intellectual disabilities* 13, 87-98.
- Mactavish J.B., Mahon M.J. & Lutfiyya Z.M. (2000) "I can speak for myself": Involving individuals with intellectual disabilities as research participants. *Mental Retardation* 38, 216-227.
- * MacDonald A., McGill P. & Deveau R. (2011) 'You squeal and squeal but they just hold you down'. Restrictive physical interventions and people with intellectual disabilities: Service user views. *International Journal of Positive Behavioural Support* 1, 45-52.
- Matson J.L. & LoVullo S.V. (2008) A review of behavioral treatments for self-injurious behaviors of persons with autism spectrum disorders. *Behavior Modification* 32, 61-76.
- * McDonnell A.A. & Sturmey P. (2000) The social validation of three physical restraint procedures: A comparison of young people and professional groups. *Research in Developmental Disabilities* 21, 85-92.
- McGill P., Murphy G. & Kelly-Pike A. (2009) Frequency of use and characteristics of people with intellectual disabilities subject to physical interventions. *Journal of Applied Research in Intellectual Disabilities* 22, 152-158.
- * Murphy G.H., Estien D. & Clare I.C.H. (1996) Services for people with mild intellectual disabilities and challenging behaviour: Service-user views. *Journal of Applied Research in Intellectual Disabilities* 9, 256-283.
- Noblit G.W. & Hare R.D. (1988) *Meta-ethnography: Synthesising qualitative studies*. Sage, London.
- Perry J. (2004) Interviewing people with intellectual disabilities. In: *The international handbook of applied research in intellectual disabilities* (Eds. E. Emerson, C. Hatton, T. Thompson & T.R. Parmenter), pp. 115-131. John Wiley & Sons, Chichester.
- * Ramcharan P., Nankervis K., Strong M. & Robertson A. (2009) *Experiences of restrictive practices: A view from people with disabilities and family carers. Final report to the Office of the Senior Practitioner*. Department of Human Services, Melbourne. Retrieved from <http://apo.org.au/sites/default/files/experiencesofrestrictivepractices.pdf>

- * Ravoux P., Baker P. & Brown H. (2012) Thinking on your feet: Understanding the immediate responses of staff to adults who challenge intellectual disability services. *Journal of Applied Research in Intellectual Disabilities* 25, 189-202.
- Sandelowski M., Voils C.I. & Barroso J. (2006) Defining and designing mixed research synthesis studies. *Research in the Schools* 13, 29-40.
- * Sequeira H. & Halstead S. (2001) "Is it meant to hurt, is it?" - Management of violence in women with developmental disabilities. *Violence Against Women* 7, 462-476.
- Tate R.L., McDonald S., Perdices M., Togher L., Schultz R. & Savage S. (2008) Rating the methodological quality of single-subject designs and n-of-1 trials: Introducing the Single-Case Experimental Design (SCED) Scale. *Neuropsychological Rehabilitation* 18, 385-401.
- Tenneij N.H. & Koot H.M. (2008) Incidence, types and characteristics of aggressive behaviour in treatment facilities for adults with mild intellectual disability and severe challenging behavior. *Journal of Intellectual Disability Research* 52, 114-124.
- Van Houten R., Rolider A. & Houlihan M. (1992) Treatments of self-injury based on teaching compliance and/or brief physical restraint. In *Self-Injurious Behavior: Analysis, Assessment, and Treatment* (eds J. Liuselli, J.L. Matson & N.N. Singh), pp. 181-199. Springer-Verlag, New York.
- Williams D.E. (2010) Reducing and eliminating restraint of people with developmental disabilities and severe behavior disorders: An overview of recent research. *Research in Developmental Disabilities* 31, 1142-1148.

Tables

Table 1

Relationships between included studies: Overview of studies that depict views, emotions, experiences, acceptability, and/or perspectives of carers and/or clients concerning restraint interventions for challenging behaviour among persons with intellectual disabilities.

Study	Data collection method	Participants	(1) Acceptability and social validation of RIs	(2) Experiences of family carers concerning RIs	(3) Experiences of people with ID concerning RIs	(4) Experiences of staff concerning RIs
<i>Relationships between included studies</i>						
1. Brown & Beail 2009	Interviews	9 persons with ID (5M - 4F)			X	
2. Cunningham <i>et al.</i> 2003	Satisfaction ratings Forced-choice comparison	18 persons with ID (18M) 21 staff (13M - 8F) 24 students (10M - 14F)	X			
3. Dagnan & Weston 2006	Interviews Questionnaire Ratings	37 staff (11M - 26F)				X
4. Elford <i>et al.</i> 2010	Interviews	7 parents (1M - 6F)		X		
5. Fish & Culshaw 2005	Interviews	9 persons with ID (7M - 2F) 16 staff (7M - 9F)			X	X
6. Foxx <i>et al.</i> 1996	Questionnaire	85 staff (22M - 63F)	X			
7. Hawkins <i>et al.</i> 2005	Interviews	8 persons with ID (6M - 2F) 8 staff (5M - 3F)			X	X
8. Jones & Kroese 2007	Interviews	10 persons with ID (7M - 3F)			X	
9. Jones & Kroese 2008	Interviews Questionnaire	16 persons with ID (13M - 3F) 20 staff (14M - 6F)	X		X	
10. Longo & Scior 2004	Interviews	29 persons with ID (?M - ?F) ¹ 20 carers (staff / family) (?M - ?F) ¹		X	X	
11. Lunsy & Gracey 2009	Focus group	4 persons with ID (4F)			X	
12. MacDonald <i>et al.</i> 2011	Interviews	8 persons with ID (7M - 1F)			X	
13. McDonnell & Sturmey 2000	Questionnaire	47 staff (13M - 34F) 41 special education teachers (8M - 33F) 74 students (?M - ?F) ¹	X			
14. Murphy <i>et al.</i> 1996	Interviews	26 persons with ID (17M - 9F)			X	
15. Ramcharan <i>et al.</i> 2009	Interviews	19 persons with ID (?M - ?F) ¹ 11 family carers (?M - ?F) ¹		X	X	
16. Ravoux <i>et al.</i> 2012	Interviews	11 staff (6M - 5F)				X
17. Sequeira & Halstead 2001	Interviews	5 persons with ID (5F)			X	

Notes: ID = intellectual disability; M = male; F = female; RIs = restraint interventions

¹ No information on the gender of these participants is given in the article.

Table 2

Brief overview of main findings, themes, or concepts from the included studies, concerning¹ restraint interventions used in the management of challenging behaviour among persons with intellectual disabilities.

Study	Main findings, themes, or concepts
1 ¹	Persons with ID and SIB: <i>negative restraint experiences (restraint experienced as a torment, as unpleasant or unhelpful having the response of clients hiding their injuries or their intent to selfharm); positive restraint experiences (external control of the SIB)</i>
2	Acceptability ratings: <i>rating of videotapes of 3 restraint interventions (2 techniques for restraint-on-floor, 1 for restraint-in-chair): restraint was evaluated negatively and the chair-method was rated the least worst of the 3 by all 3 groups (persons with ID, staff, students); persons with ID rated restraint more negatively than the 2 other groups; one of the floor methods (Harvey & Schepers 1977) was viewed less negatively than the other floor method (Lefensky et al. 1978)</i>
3	Staff: <i>studying correlation between topography of challenging behaviour, cognitive-emotional variables, with whether staff use restraint intervention and their satisfaction with their intervention (i.e., internality, stability, globality, controllability, evaluation of the behaviour, evaluation of the person, anger, sympathy, satisfaction with intervention, restraint intervention, and physical attack); attributions of control and internality associated with less satisfaction with intervention; people presenting physical aggression were evaluated more negatively; only the topography of the challenging behaviour (verbal vs. physical aggression) was associated with the use of restraint intervention; no associations between the topography of intervention and any cognitive, attribution, or emotion variables</i>
4	Parents: <i>decisions about restraint concern a very fine line between right/wrong, safety/danger, humanity/being dehumanized, helping/harming, being heard/ignored, support/isolation, being informed/kept in the dark</i>
5	Persons with ID and Staff: <i>reasons for aggression, staff responses to aggression, reasons for restraint interventions, clients' responses to restraint interventions, retraumatisation of clients, what could help decreasing the need for restraint interventions, restraint interventions as the last resort?</i>
6	Acceptability ratings: Staff: <i>studying the effects of a video vignette on the treatment acceptability ratings of 4 interventions (1 concerns restraint); significant group by testing effect with the means for the experimental group (viewed a video vignette of an extremely aggressive individual) rising whereas the control group (got a written description) means were stable; treatment acceptability is influenced by viewing the individual and challenging behaviour treated</i>
7	Persons with ID: <i>understanding their personal role and personal control during and in the ending of the restraint; their experiences during restraint concerning different ways of restraining, negative emotional reactions, body sensations, positive effects of restraint, and perception of staff force; coping with restraint experiences by means of calming and coping strategies</i> Staff: <i>before restraint concerning negative emotional reactions, level of predictability, rise in adrenaline, and decision to intervene; during restraint concerning emotional rollercoaster (positive and negative emotions), physical exhaustion, trying to get the techniques right and follow the procedures correctly, and decision to stop intervention; after restraint concerning walking on eggshells, physical and emotional aftermath, and self-debriefing</i>
8	Persons with ID: <i>goals of restraint; restraint for (sometimes not) helping to calm down and for reducing likelihood of injuries, only permissible when not deliberately physically aversive; alternatives to restraint; perceived staff emotions during restraint; staff proficiency and training for restraint; precursors of restraint; after restraint</i>
9	Acceptability ratings: Persons with ID and Staff: <i>both groups rated chair-restraint-method as more socially acceptable than both restraint-floor-methods; clients rated face-up-restraint- floor-method as more acceptable; staff rated face-down-restraint- floor-method as more acceptable</i> Interviews with persons with ID: <i>perceived factors that contribute to restraint; emotions experienced during and after restraint</i>
10 ¹	Persons with ID and Carers: <i>describing staff as harmful because of restraint use; incidents causing actual physical harm led to lack of trust; restraint use can be accepted in the context of a collaborative relationship and open exchange of information</i>
11 ¹	Persons with ID (and one caregiver): <i>alternatives to restraint (calming strategies); positive and negative restraint experiences</i>
12	Persons with ID: <i>abuse practices ('even when restrictive physical interventions are legally sanctioned, they may still be experienced as abuse'); pain involved in restraint interventions; emotional distress (in relation both to personal restraint experience and witnessing of others' restraint experiences); violent environments (violence from other clients, their own violence, violence towards staff); assumed staff motivations (positive and negative); appropriateness of restraint interventions and suggested alternatives</i>
13	Acceptability ratings: <i>rating of videotapes of 3 restraint interventions (2 techniques for restraint-on-floor, 1 for restraint-in-chair): chair-method was rated as most acceptable by all 3 groups (staff, special education teachers, students); one floor method (Lefensky et al. 1978) was more acceptable for students and special education teachers than for staff; chair-method (McDonnell et al. 1991) was more acceptable for staff than for students and special education teachers</i>
14 ¹	Persons with ID: <i>negative restraint experiences; feelings about restraint interventions</i>
15 ¹	Persons with ID: <i>perceived staff motives concerning restraint; additional strategies and alternatives to restraint; personal experiences of and emotions during restraint; emotions concerning challenging behaviour of other clients;</i>

safety and security

Family carers: *understanding restrictive practices - contextual factors: staff input (or lack of it), plans not implemented, perceived staff attitudes / perspective / approaches, service and organizational issues, environment, communication and choice, collateral damage; guidelines for good practice*

16 Staff: *before restraint concerning role ambiguity and conflict (being yourself vs. being a professional, empowering vs. controlling, containing challenging behaviour vs. teaching more functional behaviour to prevent challenging behaviour), confidence building by learning skills and getting to know the clients, defining challenging behaviour and strategies, controlling the environment, controlling the client, prioritizing best interest of all parties involved while evaluating risks, and making the right choice of strategy; during restraint concerning team working (interpersonal), responding to client who challenged (interpersonal), and controlling their own emotions (intrapersonal); after restraint concerning dealing with the aftermath and making sense in hindsight*

17 Persons with ID: *physical pain or discomfort associated with the experience of restraint; anxiety and mental distress associated with the experience of restraint; perceived intentions and feelings of staff carrying out restraint; personal angry feelings and the urge to express further aggression against others or themselves while experiencing restraint*

Notes: ID = intellectual disability; SIB = self-injurious behaviour

The numbers in the first column refer to the articles from **Table 1**.

¹ Only the parts of the articles relating to views, emotions, experiences, acceptability, and/or perspectives of carers (e.g., family, staff) and/or clients concerning restraint interventions used in the management of challenging behaviour among persons with ID, are analysed for the purposes of the present study (see Brown & Beail 2009, Longo & Scior 2004, Lunsby & Gracey 2009, Murphy *et al.* 1996, Ramcharan *et al.* 2009 for articles describing a bigger picture than the topic we were interested in).

Table 3
First order concepts and findings.

Acceptability and social validation	Experiences of family carers concerning RIs	Experiences of people with ID concerning RIs	Experiences of staff concerning RIs
<p>- RIs are negatively evaluated (2)</p> <p>- degree to which RIs are negatively evaluated depends on the method of RI (2 9 13)</p> <p>- degree to which RIs are negatively evaluated depends on degree of being involved in RI processes and confronted with CB (2 6 13)</p>	<p><u>FCs as persons giving RI:</u></p> <p>‘a very fine line between’...</p> <p>- right / wrong to restrain: power issues; potential misuse, ‘a last resort’, necessity to restrain (4)</p> <p>- safety / danger; different RI policies depending on the context (4)</p> <p>- humanity / being dehumanised: dignity, quality of life, ethics, acceptability of RIs (4)</p> <p>- helping / harming: effectiveness of RIs (4)</p> <p>- being heard / ignored: discussion with professionals on RIs, being understood (4)</p> <p>- support / isolation: support provided by services on RIs; RIs involving more than one person (4)</p> <p><u>FCs on staff giving RI:</u></p> <p>- being informed / kept in the dark: lack of communication between services and FCs about RIs leads to lack of trust ⇔ collaborative relationship and open exchange of information (4 10 15)</p> <p>- staff restrain unnecessarily due to lack of time and staffing levels (4 15)</p> <p>- staff restrain because RIs are part of the culture of services (4)</p> <p>- seclusion is about safety and engagement / active support ⇔ imprisonment (15)</p> <p>- CB as reaction to environment, e.g. too noisy environment (15)</p> <p>- CB as a way to communicate, e.g. CB tells something about relative safety, comfort, and happiness (15)</p> <p>- interventions lack coordinated approach and are ad hoc (15)</p> <p>- the views held by staff</p>	<p><u>People with ID as persons receiving RI:</u></p> <p>- influenced by characteristics of clients (e.g. level of understanding and perception) (1 5 7 8)</p> <p>- sometimes use of coping/ calming strategies: talking, relaxing, deep breathing, cognitive distraction ⇔ ‘no personal control over CB once escalated’ (5 7 8 12)</p> <p>- alternatives to RIs to reduce CB: time alone in their room, talking with staff, good and trusting relationships with staff, de-escalate potentially confrontational situations (5 8 11 12 15)</p> <p>BEFORE RI:</p> <p>- environmental reasons for CB: provocation by other clients, atmosphere, staff behaviour (5 8 9)</p> <p>- often understanding of personal role to initiation of RI: ‘for the safety’ ‘used in response to CB’ ‘to stop someone getting hurt’ ‘to calm down’ ‘when acting up’ ⇔ ‘I don’t know when it’s going to happen’ (1 5 7 8 9 12 15)</p> <p>DURING RI:</p> <p>- negative emotional reactions to RI: general dislike, sadness, anger, fear, anxiety, scared, disappointment, upset, stressed, guilty, frightened, confusion, desperation, feeling helpless against the degree of force used by staff (1 5 7 9 12 14 17)</p> <p>- negative physical sensations: pain, fatigue, exhaustion (5 7 8 10 12 15 17)</p> <p>- sometimes positive reactions to RI: ‘comfortable’, ‘feel safe’, ‘relax’ ‘helps to calm down’ ‘not getting injured’ (1 5 7 8 9)</p> <p>- sometimes counter effectiveness results of RI: stimulate further frustration, aggression, anger in clients, ‘makes things worse’; retraumatisation of past abuse (5 7 8 14 17)</p> <p>- degree to which RIs are negatively evaluated depends on the method of RI (7 8 12)</p>	<p><u>Staff as persons giving RI:</u></p> <p>- influenced by characteristics of staff (e.g. gender, (non)experienced staff) and clients (e.g. ability to communicate verbally) (16)</p> <p>- influenced by characteristics of environment, e.g. staff shortage, physical environment, presence of public (16)</p> <p>- defining CB and strategies: influenced by values of the service, staff training, policy context (16)</p> <p>BEFORE RI:</p> <p>- try discover reason for CB (often perceived as environmental or internal to clients; sometimes for reinforcing consequences), understand CB, communicative function of CB (5 7 16)</p> <p>- CB topography: associated with the use of RIs (3 16); fear, anger, distress, and risk perception of staff related to type and intensity level of CB (7 16)</p> <p>- unpredictable CB and RI process; different level of predictability across persons and incidents; ‘forewarned forearmed’ to make the unpredictable more predictable and equip staff with necessary resources, building confidence, learning the skills (clients’ guidelines, training, informal experiential learning through observing experienced staff); if ‘forewarned forearmed’ then following behavioural procedures vs. if ‘caught off guard’ then instinctual reaction (7 16)</p> <p>- getting to know the clients as prevention strategy: relationship building, trust, reciprocity (16)</p> <p>- physical reactions, e.g. rise in adrenaline levels; adrenaline carries staff throughout the RI process (7)</p> <p>- negative emotional reactions: frustrated when non-RIs are ineffective; fear, anger, distress, being upset, blaming themselves for the incident; dread (5 7)</p> <p>- decision to intervene is complex; is based in evaluating risks / benefits balance and prioritizing best interest of all parties (public, other clients, staff, client involved) involved whilst evaluating risks (safety risks, risks of retraumatisation, RI could stimulate further anger in clients); is based on previous experiences with the client’s CB; is complicated by negative emotional reactions, levels of predictability, and rise in adrenaline; choosing the right strategy; strategies are individualized and informed by client’s history, level of impairment, size; use of RIs as ‘last resort’ (5 7 16)</p> <p>- feedback process in interactions between staff and client behaviour (16)</p> <p>- role ambiguity: being yourself vs. a professional (own values vs. service values and expectations), empowering vs. controlling, containing CB vs. teaching functional behaviour (5 16)</p> <p>DURING RI:</p> <p>- staff experiences during RI relate strongly to their beliefs about and experiences of the CB of the client (7)</p> <p>- emotional reactions: range in intensity and fluctuate in relation to CB and responses of the client; influenced by characteristics of staff and client involved; emotional rollercoaster; importance</p>

<p>have significant impact on their interactions with the persons with ID (15)</p> <p>- positive evaluation of RI when staff are respectful (11)</p>	<p>- level of predictability: using different RI techniques creates anxiety for clients (8)</p> <p>- their perception of staff motives and experiences of RI: 'not very happy', 'fed up with me', 'sad', 'upset', 'scared', 'worried' ⇔ 'part of their job' ⇔ 'staff enjoyment' 'angry with me' 'RI is meant to hurt' 'to prove they are in charge' (7 8 12 15 17)</p> <p>AFTER RI:</p> <p>- negative emotional reactions after RI: sadness, anger, frightened (9 12)</p> <p>- positive emotional reactions after RI: happy, relaxed (9)</p> <p>- often no understanding of personal role and role of CB to ending of RI: 'I don't know why they stopped. They just felt like doing it' (7)</p> <p>- reporting of positive interactions with staff after RI – of being ignored after RI – of calming interventions after RI (8)</p>	<p>of staff controlling their emotions; hope vs. frustration; (-) fear, anger, irritation, sadness, worry, shock, frustration, boredom, self-doubt, disgust, guilt, helplessness, shock; (+) preventing danger/harm (7 16)</p> <p>- physical reactions: exhaustion (7)</p> <p>- concerned about getting the techniques right and following the procedures correctly to ensure the safety of the client, staff and other clients (7 16)</p> <p>- interpersonal level: actions and interaction: team-working with co-staff (support seeking, backing staff up, leadership taking) and responding to client (7 16)</p> <p>- decision to stop RI based on gradual process of monitoring changes; on joint decision between the staff involved (interpersonal); on rise in adrenaline, on 'getting it right', on level of predictability; on level of stress; on fear about ending the RI too soon (7 16)</p> <p>AFTER RI:</p> <p>- 'walking on eggshells' because low levels of predictability resulting in feeling 'on edge'; 'head is still in restraint mode'; dilemma how to best approach client without retriggering CB; 'walking on eggshells' can result in avoidance of trying to talk to client about incident ⇔ having a good relationship with clients gives them a feeling of not being rejected (5 7)</p> <p>- physical and emotional aftermath; feeling tense; emotional cost for staff; 'relief that the incident is over'; sometimes process of habituation and becoming desensitized to CB by repeated exposure (7 16)</p> <p>- informal self-debriefing and looking back; formal debriefing sessions; thinking about 'getting it right' and how the experience had been for the client; 'could we have done that differently?'; collective and individual reflection retrospectively to learn from the encounter (e.g. safety issues, team cohesion and team consistency, preferring specific co-workers, reframing, reflect about the outcome of the used RI and evaluate its effectiveness, knowing clients better, developing your style of working); re-appraising CB ('CB as testing staff or control over CB then call for authoritarian attitude' vs. 'CB as enduring and unpredictable then staff distances themselves from blame and responsibility'); appraising the impact on themselves and their rapport with the client (5 7 16)</p>
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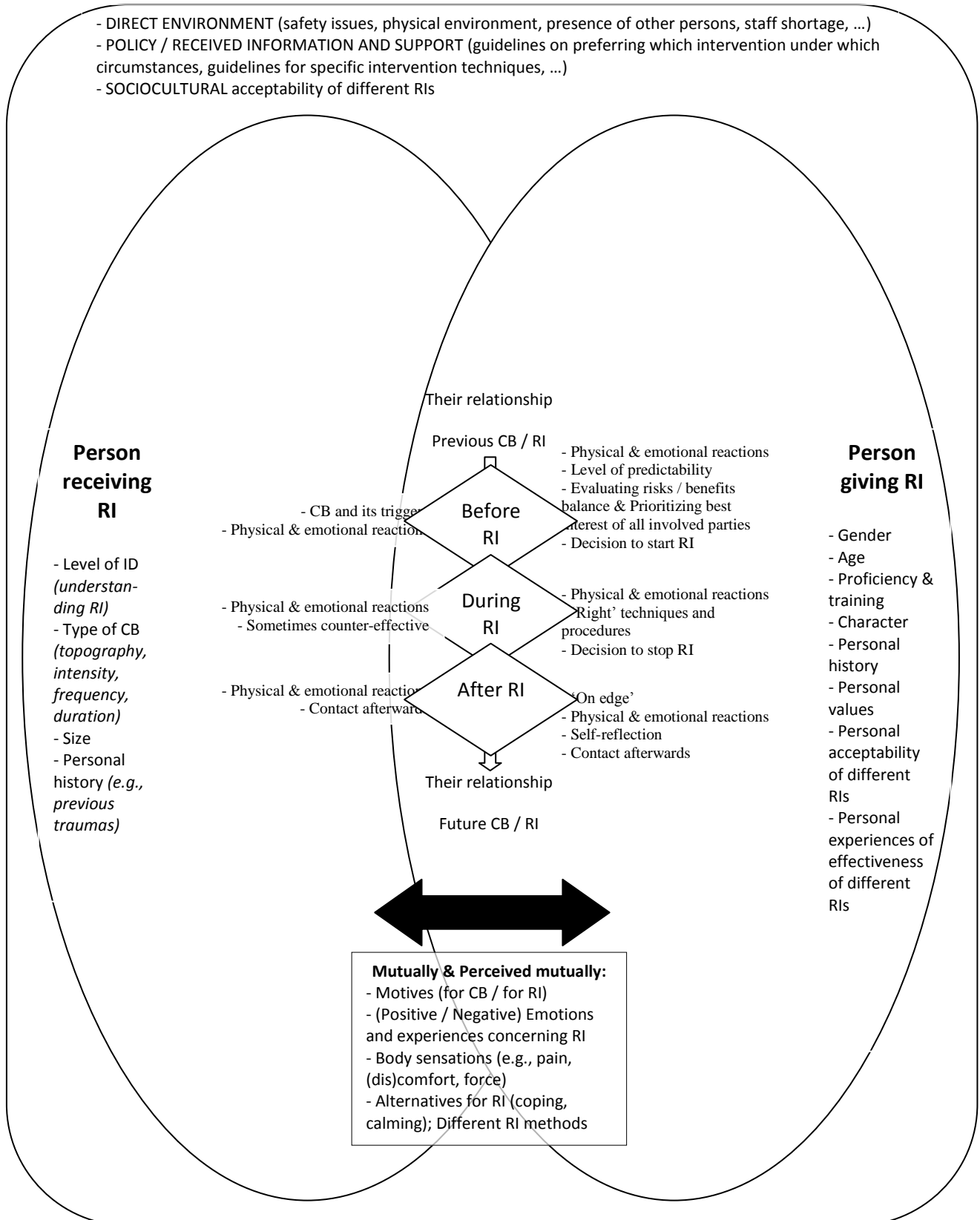
Notes: CB = challenging behaviour; FCs = family carers; ID = intellectual disability; RIs = restraint interventions
The numbers between parentheses refer to the articles from **Table 1**.

Table 4
Second order concepts and findings.

Micro-level			Meso- and macro-level
Persons giving RI (e.g. staff, family carers)	Persons receiving RI	Interactions between persons giving and receiving RI	
<p><i>Characteristics influencing RI processes:</i> e.g. Gender; Age; Proficiency & training; Character; Personal history; Personal values; Personal acceptability of different RIs; Personal experiences of effectiveness of different RIs</p> <p><i>Before RI:</i> Physical & emotional reactions; Level of predictability; Evaluating risks / benefits balance & prioritizing best interest of all involved parties; Decision to start RI</p> <p><i>During RI:</i> Physical & emotional reactions; 'Right' techniques and procedures; Decision to stop RI</p> <p><i>After RI:</i> 'On edge'; Physical & emotional reactions; Self-reflection; Contact afterwards</p>	<p><i>Characteristics influencing RI processes:</i> e.g. Level of ID (understanding RI); Type of CB (topography, intensity, frequency, duration); Size; Personal history (e.g. previous traumas)</p> <p><i>Before RI:</i> CB and its triggers; Physical & emotional reactions</p> <p><i>During RI:</i> Physical & emotional reactions; Sometimes counter effective results of RI</p> <p><i>After RI:</i> Physical & emotional reactions; Contact afterwards</p>	<p><i>Mutually & perceived mutually:</i></p> <ul style="list-style-type: none"> - Motives for CB / for RI - Positive & negative emotions and experiences concerning RI - Body sensations: e.g., pain, (dis)comfort, force - Alternatives for RI such as coping / calming strategies; Different RI methods <p><i>Before RI:</i> Their relationship; Previous CB / RI encounters</p> <p><i>After RI:</i> Their relationship; Future CB / RI encounters</p>	<ul style="list-style-type: none"> - <i>Direct environment:</i> safety issues, physical environment, presence of other persons, staff shortage, ... - <i>Policy / received information and support:</i> guidelines on preferring which intervention under which circumstances, guidelines for specific intervention techniques, ... - <i>Sociocultural acceptability</i> of different RIs

Notes: CB = challenging behaviour; ID = intellectual disability; RI = restraint intervention

Figure 1
Heuristic model.



Notes: CB = challenging behaviour; ID = intellectual disability; RI = restraint intervention